

ATTACHMENT C

TI Effects of perilla seed oil supplementation on leukotriene generation by leucocytes in patients with asthma associated with lipometabolism.

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AB BACKGROUND: Dietary sources of alpha-linolenic acid, such as perilla seed oil, may have the capacity to inhibit the generation of leukotrienes (LTs) by leucocytes in patients with asthma, as has been reported with the consumption of other long-chain n-3 fatty acids. METHODS: The factors affecting the suppression of leukotriene (LT) C4 generation by leucocytes were examined by comparing the clinical features of patients with asthma who had been given dietary perilla seed oil (n-3 fatty acids). Group A consisted of patients in whom the leucocyte generation of LTC4 was suppressed by dietary perilla seed oil. Group B consisted of those in whom LTC4 generation was not suppressed. RESULTS: LTC4 generation by leucocytes decreased significantly in group A after 2 ($p < 0.05$) and 4 weeks ($p < 0.05$); conversely, it increased significantly in group B after 4 weeks ($p < 0.05$). The two study groups differed significantly in terms of LTC4 generation by leucocytes after 4 weeks of dietary supplementation ($p < 0.05$). Ventilatory parameters such as peak expiratory flow (PEF), forced vital capacity (FVC) and forced expiratory volume in 1 s (FEV(1)) increased significantly after 4 weeks of dietary supplementation in group A ($p < 0.05$). Values of PEF, FVC, FEV(1) and maximum expiratory flow at 25% of the forced vital capacity (V(25)) differed significantly between groups A and B prior to dietary supplementation. Serum levels of total cholesterol, low-density lipoprotein (LDL) cholesterol and phospholipid were significantly decreased by dietary supplementation in group A after 4 weeks. Serum levels of total cholesterol, triglyceride, high-density lipoprotein cholesterol, LDL cholesterol and phospholipid differed significantly between the two study groups prior to dietary supplementation. Serum levels of triglyceride and LDL cholesterol differed significantly between the two study groups after 4 weeks of dietary supplementation. CONCLUSIONS: Dietary supplementation with perilla seed oil in selected patients with asthma suppresses the generation of LTC4 and is associated with clinical features such as respiratory function and lipometabolism.

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